Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:
Manitowoc Co. QL2 LiDAR (2015-16) - DEM

1.2. Summary description of the data:
The Manitowoc County lidar project area covers approximately 602 square miles plus a 100 meter buffer around the county boundary. The lidar data was acquired at a nominal point spacing (NPS) of 0.7 meters and a single swath nominal point density (NPD) of 2.0. Project specifications are based on Manitowoc County requirements and on the U.S. Geological Survey National Geospatial Program LiDAR Base Specification, Version 1.2. The data was developed based on a horizontal projection/datum of NAD83(2011) / WISCRS Manitowoc (ftUS) (EPSG code: 7614), and vertical datum of NAVD88 - Geoid12A (Feet). LiDAR data was acquired using the Orion Optech H300 sensor from November 2, 2015 to November 10, 2015 in five total lifts. Acquisition occurred after leaves had fallen from deciduous trees, before snow was on the ground, and with rivers at or below normal levels.

The data was converted to vertical meters for ingest into the Digital Coast Data Access Viewer.

Original contact information:

Contact Name: Cathy DeLain

Contact Org: Manitowoc County

Title: GIS Coordinator

Phone: 920-683-2781

Email: cathydelain@co.manitowoc.wi.us

1.3. Is this a one-time data collection, or an ongoing series of measurements?
One-time data collection

1.4. Actual or planned temporal coverage of the data:
2015-11-02 to 2015-11-10

1.5. Actual or planned geographic coverage of the data:
W: -88.047445, E: -87.505089, N: 44.329611, S: 43.889563

1.6. Type(s) of data:
(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)

1.7. Data collection method(s):
(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

2.1. Name:
NOAA Office for Coastal Management (NOAA/OCM)

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:
NOAA Office for Coastal Management (NOAA/OCM)

2.4. E-mail address:
coastal.info@noaa.gov

2.5. Phone number:
(843) 740-1202

3. Responsible Party for Data Management
Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:

3.2. Title:
Data Steward

4. Resources
Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

5. Data Lineage and Quality

NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Process Steps:

- LiDAR processing utilizes several software packages, including GeoCue and the TerraSolid suite of processing components. The GeoCue software is a database management system for housing the LiDAR dataset (usually multiple gigabytes in size). GeoCue incorporates a thorough checklist of processing steps and quality assurance/quality control (QA/QC) procedures that assist in the LiDAR workflow. The TerraSolid software suite is used to automate the initial classification of the LiDAR point cloud based on a set of predetermined parameters. Lidar technicians refer to ground cover research (natural and cultural features) within the project area and determine algorithms most suitable for the initial automated LiDAR classification. (Some algorithms/filters recognize the ground in forests well, while others have greater capability in urban areas). During this process each point is given an initial classification (e.g., as ground, vegetation, or noise) based on the point's coordinates and the relation to its neighbors. Classifications to be assigned include all those outlined by ASPRS standards. The initial classifications produce a coarse and inexact dataset, but offer an adequate starting point for the subsequent manual classification procedure. During this step, "overlap" points are automatically classified (those originating from neighboring flightlines) using information gathered from the ABGPS and IMU data. Any duplicate points existing from adjacent flightlines are removed during this process. Hydrographic breaklines are collected using LiDARgrammetry to ensure hydro flattened water surfaces. This process involves manipulating the LiDAR data's intensity information to create a metrically sound stereo environment. From this generated "imagery", breaklines are photogrammetrically compiled. Breakline polygons are created to represent open water bodies. The LiDAR points that fall within these areas are classified as " water." All hydrographic breaklines include a 3.125 foot buffer, with the Class 2 (bare earth) points being re-classified as Class 10 (ignored ground). TerraSolid is further used for the subsequent manual classification of the LiDAR points allowing technicians to view the point cloud in a number of ways to ensure accuracy and consistency of points and uniformity of point coverage. The TIN was processed to create a GRID or digital elevation model (DEM) with 2 foot pixels.

- 2017-07-05 00:00:00 - The NOAA Office for Coastal Management received the data

from the Wisconsin Department of Natural Resources in img format. The vertical coordinates were converted from feet to meters using gdal_translate.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?
No

6.1.1. If metadata are non-existent or non-compliant, please explain:
Missing/invalid information:
- 1.6. Type(s) of data
- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

6.2. Name of organization or facility providing metadata hosting:
NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:
https://www.fisheries.noaa.gov/inport/item/49475

6.4. Process for producing and maintaining metadata

(describe or provide URL of description):
>   Metadata produced and maintained in accordance with the NOAA Data Documentation
>   Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-
>   Data_Documentation_v1.pdf

7. Data Access

NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:
NOAA Office for Coastal Management (NOAA/OCM)

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:
>   https://coast.noaa.gov/dataviewer/#/lidar/search/where:ID=6343
>   https://coast.noaa.gov/htdata/raster2/elevation/WI_3DEP_Manitowoc_2015_6343

7.3. Data access methods or services offered:
This data can be obtained on-line at the following URL: https://coast.noaa.gov/dataviewer

;

7.4. Approximate delay between data collection and dissemination:

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection
The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to

identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:
(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):
Office for Coastal Management - Charleston, SC

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?
Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

9. Additional Line Office or Staff Office Questions
Line and Staff Offices may extend this template by inserting additional questions in this section.